

AMENDMENTS TO THE CLAIMS

1. (withdrawn) A microlens comprising:

a first light conductor having at least one concave recess; and

a second light conductor within said at least one recess.
2. (withdrawn) The microlens of claim 1, wherein a topmost surface of said first light conductor is planar to a topmost surface of said second light conductor.
3. (withdrawn) The microlens of claim 1, wherein said second light conductor has a peripheral portion formed over a topmost surface of said first light conductor.
4. (withdrawn) The microlens of claim 1, wherein said first light conductor has a first index of refraction and said second light conductor has a second index of refraction that is different from said first index of refraction.
5. (withdrawn) The microlens of claim 4, wherein said first index of refraction is less than said second index of refraction.
6. (withdrawn) The microlens of claim 1, wherein said first light conductor is formed of material selected from the group consisting of glass, an optical thermoplastic material, a polyimide, a thermoset resin, a photosensitive gelatin, and a radiation curable resin.
7. (withdrawn) The microlens of claim 1, wherein said second light conductor is formed of material selected from the group consisting of glass, an optical thermoplastic material, a polyimide, a thermoset resin, a photosensitive gelatin, and a radiation curable resin.
8. (withdrawn) The microlens of claim 1, wherein a lower surface of said microlens is planar.
9. (withdrawn) The microlens of claim 1, further comprising a color filter formed over said second light conductor.

10. (withdrawn) The microlens of claim 1, further comprising a color filter formed below said first light conductor.

11. (withdrawn) A microlens comprising:

a first light transmissive layer having an output surface and a receiving surface, the receiving surface having a concavity therein; and

a second light transmissive layer in the concavity; the second light transmissive layer having an input surface and a transmitting surface that meets the receiving surface at a boundary;

light entering the input surface being refracted at the boundary before exiting the output surface.

12. (withdrawn) The microlens of claim 11, wherein said second light transmissive layer has a higher index of refraction than that of said first light transmissive layer.

13. (withdrawn) A microlens array comprising:

a first light conductor having a plurality of concave recesses; and

a second light conductor within each recess and over said first light conductor.

14. (withdrawn) The microlens array of claim 13, wherein said second light conductor has a peripheral portion formed over a topmost surface of said first light conductor.

15. (withdrawn) The microlens array of claim 13, wherein said plurality of concave recesses contact each other.

16. (withdrawn) The microlens array of claim 13, wherein said plurality of concave recesses are coextensive with each other.

17. (withdrawn) The microlens array of claim 13, wherein said plurality of concave recesses have an elongated shape.

18-20 (cancelled)

21. (currently amended) A light detecting system comprising:

a substrate having a plurality of photosensitive regions; and

a substantially planar microlens array formed over said plurality of photosensitive regions; said microlens array comprising:

a first light conductor having a plurality of concave recesses; and

a second light conductor within each recess and over a planar surface of said first light conductor.

22-26 (canceled)

27. (currently amended) An integrated circuit comprising:

a substrate having a plurality of photosensitive regions; and

a microlens array formed over said plurality of photosensitive regions; said microlens array comprising:

a first light conductor having a plurality of concave recesses, said plurality of concave recesses being coextensive, and;

a second light conductor within each recess and over said first light conductor; and

readout circuitry coupled to said plurality of photosensitive regions within said substrate, ~~said readout circuitry providing signals from the photosensitive region.~~

28-30 (canceled)

31. (Withdrawn) A method of forming a microlens, said method comprising:

a first light conductor having at least one concave recess; and

a second light conductor within said at least one recess.

32. (Withdrawn) A method of forming a microlens, said method comprising:

providing a first light transmissive layer having an output surface and a receiving surface, the receiving surface having a concavity therein; and

providing a second light transmissive layer in the concavity; the second light transmissive layer having an input surface and a transmitting surface that meets the receiving surface at a boundary, such that light entering the input surface being refracted at the boundary before exiting the output surface.

33. (currently amended) A method of forming an imaging device, said method comprising:

providing a substrate having a plurality of photosensitive regions; and

forming an array of microlenses, the array including a respective microlens over each of said plurality of photosensitive regions by:

forming a first light conductor having ~~a at least one~~ concave recess over each of said photosensitive regions such that said concave recess contacts an adjacent concave recess; and

forming a second light conductor within each concave recess such that said second light conductor is coextensive with an adjacent second light conductor. ~~of said at least one recess.~~

34. (canceled)

35. (canceled)

36. (original) The method of claim 33, further comprising the act of forming a color filter between said substrate and said second light conductor.

37. (original) The method of claim 33, wherein each first light conductor has a first index of refraction and each second light conductor has a second index of refraction that is different from said first index of refraction.

38. (original) The method of claim 33, wherein at least one of said first light conductors is formed of a material selected from the group comprising of glass, an optical thermoplastic material, a polyimide, a thermoset resin, a photosensitive gelatin, and a radiation curable resin.

39. (original) The method of claim 33, wherein at least one of said second light conductors is formed of a material selected from the group comprising of glass, an optical thermoplastic material, a polyimide, a thermoset resin, a photosensitive gelatin, and a radiation curable resin.

40. (currently amended) The method of claim 33, wherein said array of concave recesses ~~at least one concave recess~~ is formed by chemical etching said first light conductor.

41. (currently amended) The method of claim 33, wherein said array of concave recesses ~~at least one concave recess~~ is formed by reactive ion etching said first light conductor.

42-46 (canceled)

47. (new) The light detecting system of claim 21, wherein said first light conductor has a first index of refraction and said second light conductor has a second index of refraction that is different from said first index of refraction.

48. (new) The light detecting system of claim 21, wherein said first index of refraction is less than said second index of refraction.

49. (new) The light detecting system of claim 21, wherein at least one of said first and second light conductors is formed of material selected from the group consisting of glass, an optical thermoplastic material, a polyimide, a thermoset resin, a photosensitive gelatin, and a radiation curable resin.

50. (new) The light detecting system of claim 21, further comprising a color filter formed over said second light conductor.

51. (new) The light detecting system of claim 21, further comprising a color filter formed below said first light conductor.

52. (new) The light detecting system of claim 21, wherein a portion of said second light conductor over said planar surface of said first light conductor has a thickness approximately equal to $\lambda/2 * N$, wherein λ refers to a particular wavelength of light entering said microlens, and N refers to an index of refraction associated with said second light conductor.

53. (new) The integrated circuit of claim 27, wherein said first light conductor has a first index of refraction and said second light conductor has a second index of refraction that is different from said first index of refraction.

54. (new) The integrated circuit of claim 27, wherein said first index of refraction is less than said second index of refraction.

55. (new) The integrated circuit of claim 27, wherein at least one of said first and second light conductors is formed of material selected from the group consisting of glass, an optical thermoplastic material, a polyimide, a thermoset resin, a photosensitive gelatin, and a radiation curable resin.